

A central collage of military logistics operations. It includes a green helicopter in flight, a soldier in camouflage, a large cargo ship, a soldier in a desert environment, a soldier in a field, and a large military truck. The background is a blue gradient with binary code (0s and 1s) and a globe.

Next Generation Logistics Transactions - Extensible Markup Language (XML) Kick- Off Meeting

DLSS/DLMS X12 & XML - Our Approach

Dale Yeakel & Nat Obey

Defense Logistics Management Standards Office

<http://www.dla.mil/j-6/dlmso/>

**MODELS
1984**

**FIPS 161.2
1996**

xxx
xxx

**DoDD
8190.1
2000**

**XML
2002**

**MILS
1960'S**



Business Rules and Standards

Outline:

- **Purpose/mission**
- **Key DoD oversight policy**
- **What we do**
- **Who we do it for**
- **How we do it**
- **Not easy stuff**
- **Current focus areas**
 - **Migrating DoD unique information standards to common commercial standards**
 - **Supporting modernization (ERPs)**
 - **Exploring new technology solutions**
- **XML within the DLMS**
- **Summary**



Business Rules and Stand

Purpose/Mission:

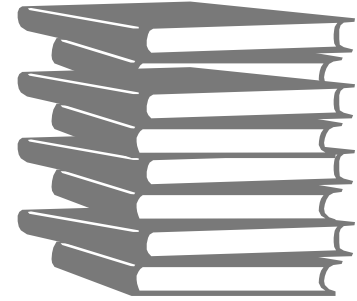
- **Facilitate enterprise integration and continuous process improvements to logistics management and operations by:**
 - **Developing business rules and implementation of DoD policy**
 - **Developing and managing the DoD logistics information exchange infrastructure**
 - **Publishing detailed procedures that identify who does what, when, and how along the D supply chain:**





Business Rules and Standards

Key DoD oversight policy:



- **DoDD 8190.1, DoD Logistics Use of EDI Standards:**
 - **DoD Executive Agent for logistics data interchange**
- **DoDD 4140.1 Materiel Management Policy**
 - **Authorizes publication of DoD business rules and standards**
- **DoD 4140.1-R Materiel Management Regulation**
 - **“Loaded” with policy, procedure, and guidance**

• **DoD 4000.25 series of Manuals covering both business rules and standards (operational development and implementation) is well grounded in DoD policy responsibilities, procedures, rules, and**



Business Rules and Stand

What we do:

- **DLMSO administers DoD-wide:**
 - **Defense Logistics Standard Systems (DLSS)**
 - **Defense Logistics Management System (DLM)**
 - **DoD Physical Inventory Control Program**
 - **DoD Logistics Functional Data Administration**
- **DLMSO chairs:**
 - **DLMS Process Review Committees (PRCs)**
 - **Unique Item Tracking Committee**
 - **Customer Wait Time / Logistics Response Time**
 - **DoD Supply Discrepancy Reporting Sub-Comm**
 - **Joint Physical Inventory Working Group**
 - **Joint Small Arms Coordinating Group**
 - **DoDAAD/MAPAD Committees**



Business Rules and Standards

DoD Policy → Business Rules → Standards

DoD 4140.1-R...
Ensure accurate property...records for the physical inventory are maintained in support of customers requirements and business by



DoD 4000.25-M, Vol 2 (28 pages of detailed business rules that support DoD policy)...
C6.3.8.1.1 Requested Inventory. When the owner/manager has requested an unscheduled inventory...the owner/manager will

initiate a follow-up using DS 846P which is a Logistics Management Code X...from the DS 846P that is a Person-to-Person established...



DS 846P Supplement to Federal E. 846P Physical Inventory Request

846 Inventory Inquiry/Advice

Functional Group: IB

This DS 846P Standard for Trial Use contains the format and content of the data elements of the Inventory Inquiry/Advice Transaction Set (846) items within the context of an Electronic Data Interchange (EDI) environment. The transaction set can be used in the following ways: (1) to be a bill of goods and services to provide inventory information to a prospective purchaser, with an obligation to the purchaser to accept these goods and services; (2) for a representative of a holder of goods and services to supply inventory information to that holder; (3) for one location to supply another location with inventory information; and (4) for an inquiry as to the availability of inventory with no obligation on the seller of goods and services to reserve that inventory.

Notes:

2.000 The REF tag contains serial number, lot number, and inventory date.

3.000 Number of lots items (CTTY4) is the summation of number of LSN segments. If used, link field (CTTY5) is the sum of the values of the quantities (QTY03) of each QTY segment.

Federal Note:

1. Generate and manage your own data transactions and to request, receive, send, and control a release of inventory by a distribution agent or storage activity. Owners and managers may also use their transactions set to provide a data release agent of storage activity with an inventory activity and manager report for use with developing physical inventory activities. Owners and managers may use their transactions set to request information from a distribution agent.

2. One use occurrence of this transaction set to transmit a single or multiple transactions.

3. DS 846P requires users should refer to the Logistics Management System (LMS) Standard in the Federal Information Management System (FIMS) available at <http://www.fims.gov> (M-5) address. The LMS Standard provides specific business rules, conditions and other information necessary for appropriate use of DS 846P within the LMS.

DLMS Note:

1. Distribution agent/manager activities use this transaction set to control another reachable or physical inventory request by an owner/manager. Distribution agent/manager activities also use this transaction set to request for a request for information from a distribution agent/manager.

2. One use occurrence of this transaction set to exchange information between a single owner/manager and a single or multiple distribution agent/manager activities, or between a single distribution agent/manager activity and a single or multiple owner/manager.

3. Users operating under the Logistics Management System (LMS) must reference the Use of Data and Purchase Data Convention Table and the Accounting Classification Appendix which can be found in the Logistics Management Standards (LMS) (DLMS) website at <http://www.fims.gov>.

4. This DS 846P segment contains:

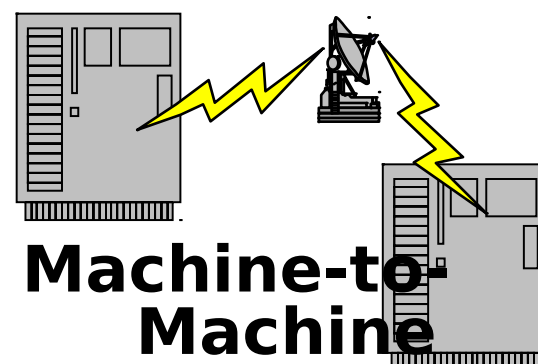
a. Data associated with a DLMS environment which is used for the request and authorized by the recipient's automated processing system (DLMS) processing system. Components must coordinate requirements and data associated with DLMS prior to use.

b. Data associated with an approved change which may not have an established modification date. This data may not be received or authorized by the recipient's automated processing system. Components must coordinate requirements with DLMS prior to use.

c. Logistics Management System (LMS) data which is used for information in the LMS for a transaction period to support transaction completion in a DLMS environment. This data will be authorized only once all DLMS modifications are executed. Components may coordinate with DLMS for any information for a release of specific data requirements for later operating in a full DLMS environment.

d. Data elements which have an established date and allow sending DLMS capability which may not be supported by the recipient's automated processing system. Components must coordinate requirements with DLMS prior to use.

DS 846P Supplement 1 March 20, 2004



Machine-to-Machine

integration glue...defines who does what, to whom, when, and



Business Rules and Standards

Business Rule Hierarchy

Governing Rules - Operating Rules - Automated Rules



Physical Inventory Control

Governing Rules

DoD Policy is contained in DoD 4140.1-R, paragraph C5.7.5.1.1

Physical inventory procedures are contained in DoD 4000.25-M, Vol 2, Chapter 6

Operating Rules

Example: Paragraph C6.2.6.1: Owners/managers and storage activities shall daily match all active record (stock number which had any transactions affecting record balances) on hand balances.

Automated Rules

The storage activity shall submit the daily closing balance to each affected owner/manager using MS supplements to Federal IC 846R with Code List Qualifier Code FH citing code 1 (End of Day Processing)

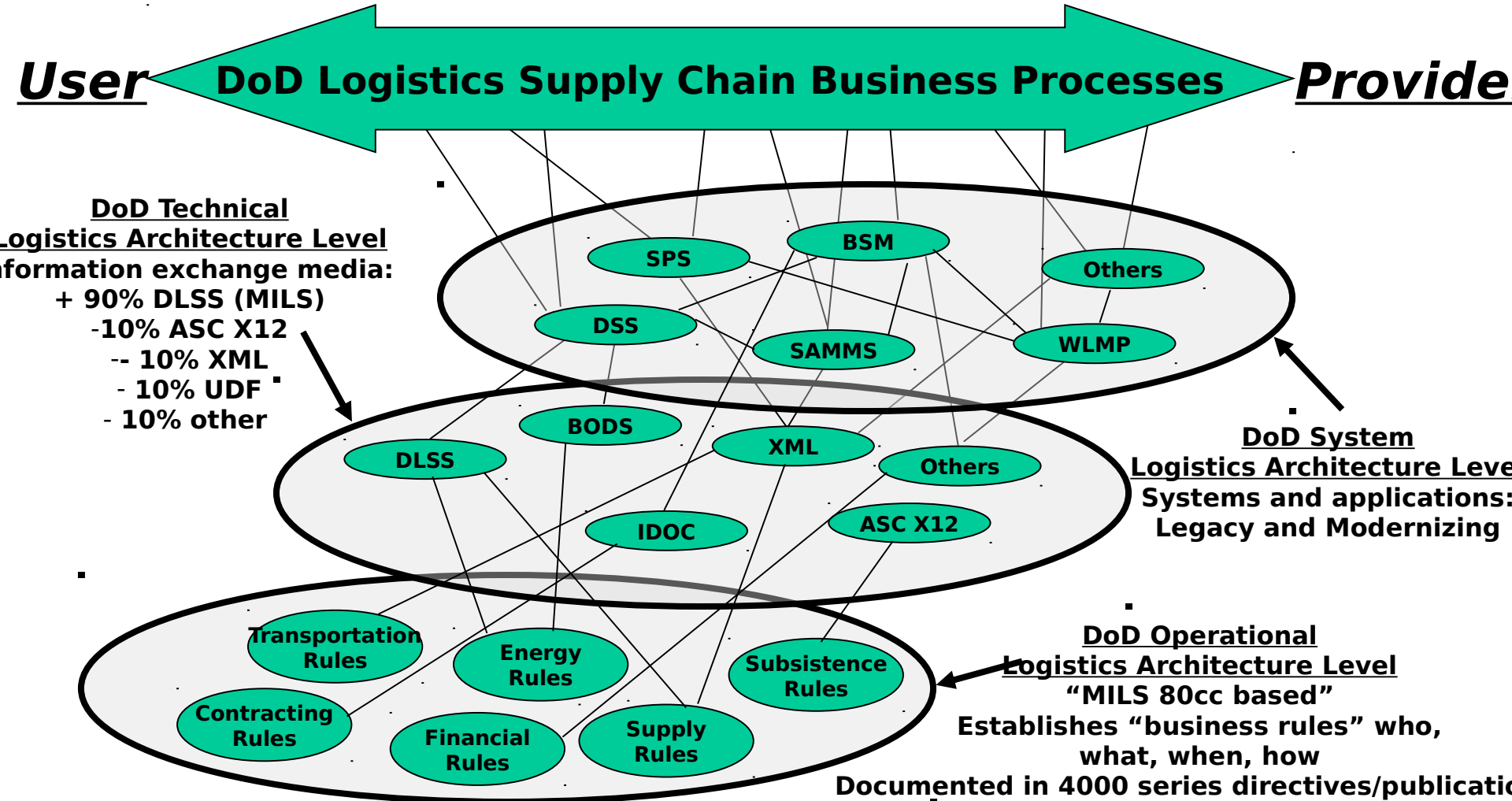
Computer Speak

```
If DS846R LQ02 QTY02 Quantity.Qualifier.Code = SYSTEM.BALANCE
then Generate DS846R LQ01 Code. List. Qualifier.Code FH=1
(To show Balance is End of Day) and LQ02 QTY02 Code.List.Qualifier
Quantity(End of Day Balance)
```

```
If DS846R LQ02 QTY02 Quantity.Qualifier.Coder Not Equal SYSTEM.BALANCE
then Generate DS947I W1901 Quantity.or.Status.Adjustment.Reason.Code=AB
and W1902 Credit.Debit.Quantity (End of Day Balance)
```




Business Rules and Standards



**DoD dilemma: To maintain *backward compatibility* - Modernizing to Legacy:
 driven business rules must be embedded/applied at the operational, technical, and system**



Business Rules and

Transaction Construction Rules (Level 1):

“What's allowed and what's not” available codes for data elements, mandatory or optional - technical construction

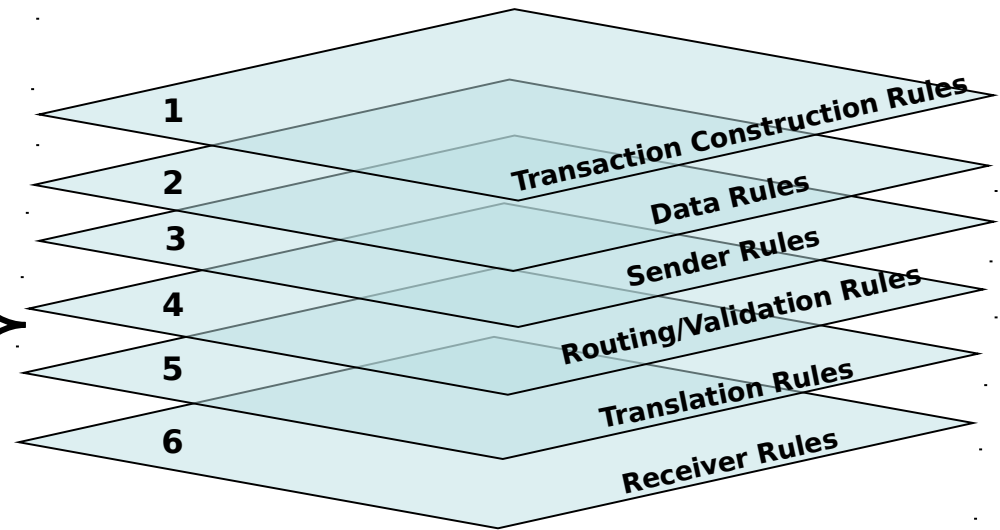
Data Rules (Level 2): The rules about each data element: meaning, structure, valid values, etc.

Sender Rules (Level 3): Describes how to communicate senders business requirements

Routing/Validation Rules (Level 4): Describes how transactions are validated and where DAAS sends them

Translation Rules (Level 5):

Machine Readable Transaction



Levels 2 through 6 are independent of the media of transport (level 1)
DLSS, DLMS, XML, IDOC, UDF, BODS, etc.

integration glue...defines who does what, to whom, when, and



Business Rules and Standards

**Information Exchange Business Rules and Standards Is
A Key to Interoperability**



Process rules and standards documented in DoD 4000.25-M
ERP systems will likely drive need to revise business rules

Collaborative process for development and publication managed by DLM/DO

Shared DB
Exchanges

X12 based
EDI

SAP IDOCS

Other

XML

MILS/DLSS 80 column
EDI

Information Exchange Transport Mechanisms

Business Rules and Data Standards



Business Rules and Standards

Inputs:

DoD policy change
Component requirements
Congressional mandates

Process Review Committee (PRC) Chairperson receives/reviews and distributes Proposed DLMS Change (PDC) proposal

Services/Agencies assess/review/comment on PDC

Process management and configuration:

PRC Chairperson issues implementation package

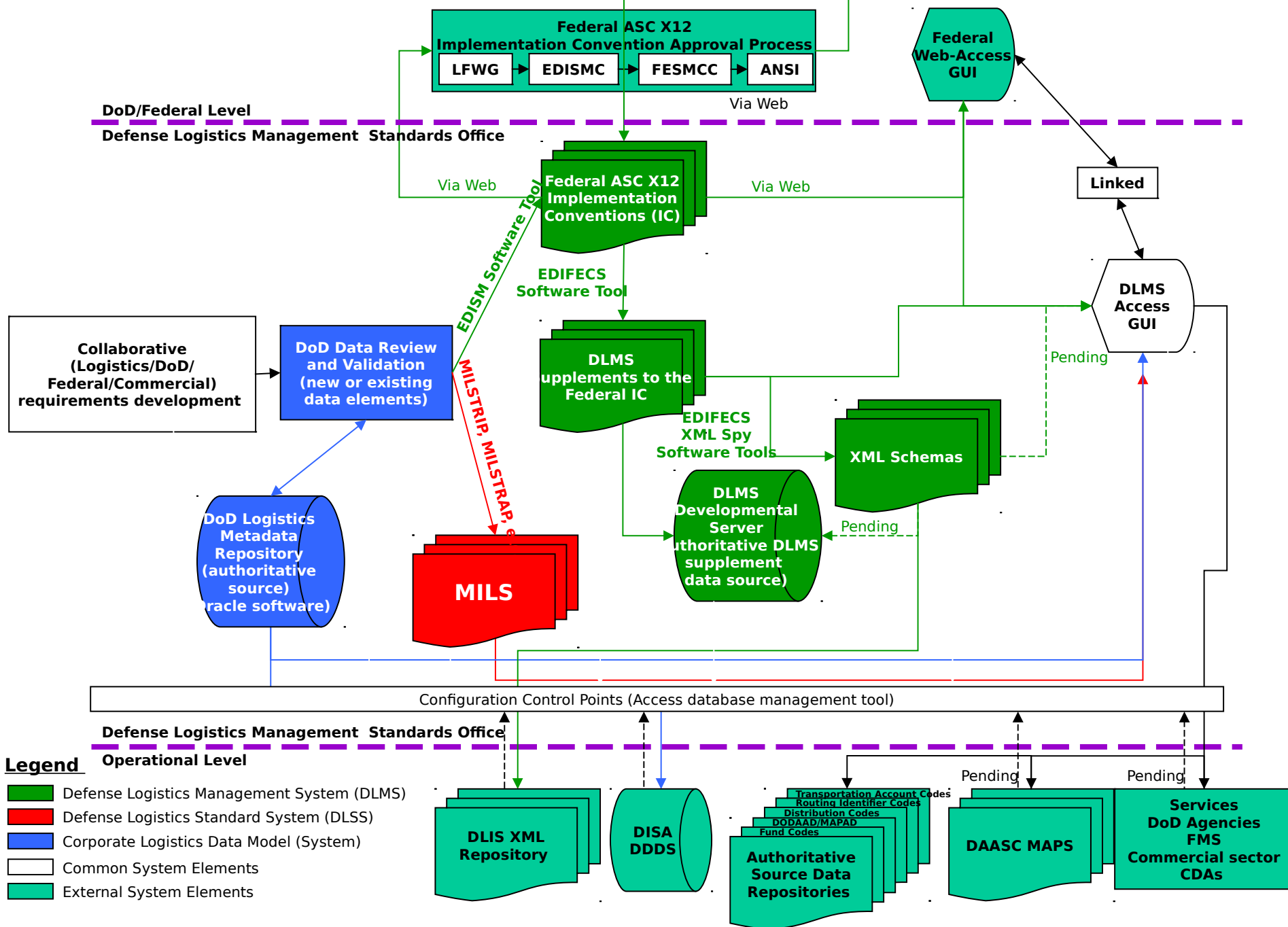
Services/Agencies implement change (resource/priority dependent)

PRC Chairperson consolidates Comments/obtains component approval

DoD/Federal oversight for Implementation (IC) structural changes
Functional Working Groups
DISA Compliance Check
ANSI coordination (applicable to new standards development)
Electronic Data Interchange Standards Management Committee (EDISMC)/Federal EDI Standards Management Coordinating Committee (FESMCC)

PRC Chairperson negotiate implementation date with Services/Agencies

DoD "Good News Story"
Time tested, effective, efficient, institutionalized; meets today's challenges





Business Rules and Stand

Who we do it for ---

customers/users:

- **TOP LEVEL MANAGEMENT:** OSD PSAs, Joint Chiefs of Staff (JCS), UCCs, Component Headquarters, Major Commands, Civil Agency Headquarters, etc.
- **DoD & Non DoD OPERATIONAL TRADING PARTNERS:** Cradle-to-grave process management activities, enterprise-wide service providers, private sector product & service providers, and civil agencies, and foreign governments.



Business Rules and Stand

Not Easy Stuff:

- **How does a customer identify when he wants delivery?**
 - **Priority designator --- maybe unless there's an RDD**
 - **Required delivery date --- maybe unless RDD contains:**
 - **A special code or...**
 - **Transaction has special management indicator or...**
 - **There is pre-agreed to arrangement with supplier**



Business Rules and Stand

Current focus areas:

- **Migrating DoD unique information standards to common commercial practices (Federally mandated standards)**
- **Supporting modernization (Enterprise Resource Planning (ERP))**
- **Exploring new technology solutions**
- **Process management and configuration**



Business Rules and Standards

Migrating DoD unique information standards to common commercial standards:

Characteristics of

DoD-Unique

- Business Practices
- Systems
- Data
 - Interfaces
 - Data Elements
 - Codes

Standards

MILS 80 column card
DLSS formats

ANSI ASC X12
HL7 UN/EDIFACT

Web-based EDI
(e.g., XML) standards

Implementation Conventions (ICs)

DLSS 450+/- Transaction Sets
Embedded In Systems

ANSI ASC X12 Separates Data
55 ICs From Systems

Web-interpretable
Repository-based ICs

Data

Redundant Data
Complex/Unique Codes
Multiple Replications

Common Data
Data Management
Data Independence

Comprehensive
Data Reference Model

Characteristics of

Open International (Commercial)

- Best Business Practices
- Commercial Off-The-Shelf Software
- Shared / Integrated Data
 - Standard Interfaces
 - Standard Data Elements
 - Standard Codes

Pace of standards, ICs, and data must



Business Rules and Standards

Supporting modernization (ERPs):

• IAW DoD direction and in coordination with Components:

- Identified common enterprise-wide requirements
- Mapped requirements against current capabilities - revealed gaps

- Identified policies/framework needed to support enterprise-wide economic and effective implementation



Army Log Mod



Develop a plan of action with implementation

stone

BSM

business systems modernization
a strategy for 21st century logistics

Navy ERP





Business Rules and Standards

DoDD 8190.1...

Exploring new technology solutions:

“A broad base of business rules to include uniform policies, procedures, time standards, transactions, and data management designed to meet DoD’s requirements for total logistics support. The DLMS is founded upon the sound application of ANSI ASC X12 EDI and will be expanded to employ other emerging EB/EC technologies such as: data sharing, automated identification technology, object-oriented user interfaces, electronic malls, web based technology, and electronic funds transfer.”

Opens the door to new and emerging technologies



(XML)?

Business Rules and

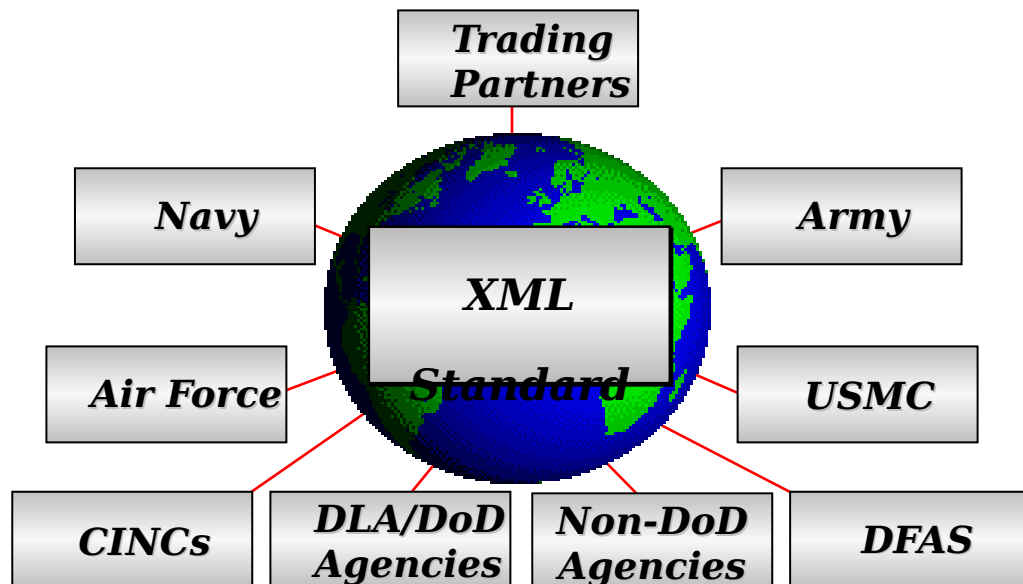
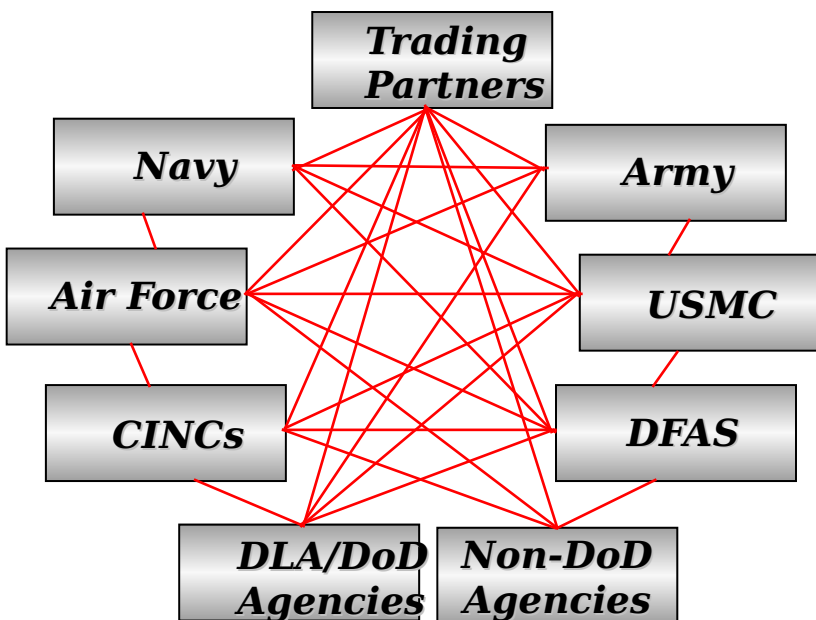
- XML - subset of SGML (Standardized General Markup Language) and HTML

- Provides more flexible EDI form designed to support WEB based applications
- DLA/DLMSO strongly supporting development of XML schemas and implementation of XML standard for DoD
- DLMSO has developed W3C compliant XML schemas, using EDIFECs SpecBuilder tool.
The XML schemas equate to the DLMS ANSI ASC X12 ICs/supplements.
- DLMSO participating/supporting various industry groups (ASC X12 XML Workgroup, Federal CIO XML Workgroup, and DISA Namespace Manager & Repositories)
- DAASC has capability to translate - MILS/DLSS><DLMS X12><DLMS XML



Business Rules and

Why a “standard” approach?




Ensures interoperability among trading partners for interagency transactional exchanges



Business Rules and

XML Schema

Address http://www.dla.mil/j-6/dlms/eLibrary/TransFormats/Schemas/004010F511R3RA03_Apr0403.pdf Go

C:\XML Schemas\511R Requisition\004010F511R3RA03_Apr0403.xsd  07/31/03 11:26:10

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- Automatically generated by EDIFecs SpecBuilder (http://www.edifecs.com) -->
<xsd:schema targetNamespace="http://www.edifecs.com/xdata/200" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns="http://www.edifecs.com/xdata/200" elementFormDefault="qualified" version="1.0">
  <xsd:element name="T_Requisition" type="T_511"/>
  <xsd:complexType name="T_511">
    <xsd:annotation>
      <xsd:documentation>This Draft Standard for Trial Use contains the format and establishes the data contents of the Requisition Transaction Set
(511) for use within the context of an Electronic Data Interchange (EDI) environment. This transaction set can be used to requisition needed material and
equipment from a supply distribution system for immediate consumption or stockage against projected requirements. The originator can also use this
transaction set to inquire about the status of, amend, or terminate the original requisition. This transaction set may be used to convey a description and quantity
of the required material, delivery and billing information, and other logistics information necessary to evaluate and meet the material needs of the originator. This
transaction set is not used to establish a contractual relationship between trading partners, and may precede the use of a purchase order.
</xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="Internal-Properties" type="Internal-Properties" minOccurs="0"/>
      <xsd:element name="S_Transaction_Set_Header" type="S_ST"/>
      <xsd:element name="S_Beginning_Segment_for_Material_Management" type="S_BR"/>
      <xsd:element name="L_Name" type="L_N1" maxOccurs="20"/>
      <xsd:element name="L_Assigned_Number" type="L_LX" maxOccurs="unbounded"/>
      <xsd:element name="S_Transaction_Set_Trailer" type="S_SE"/>
    </xsd:sequence>
    <xsd:attribute name="Type" type="xsd:string" default="Transaction"/>
    <xsd:attribute name="ID" type="xsd:string" default="511"/>
    <xsd:attribute name="Name" type="xsd:string" default="Requisition"/>
  </xsd:complexType>
</xsd:schema>
```

1 of 31 8.5 x 11 in



Business Rules and

Where We Are

Current status:

- **DLMSO has acquired COTS tools: EDIFECS & X**
- **Schema generation (version 2) is complete**
- **DAASC has acquired Mercator v6.5 Schema In**
- **DLIS & DISA repositories in place**
- **Schemas posted to DLMSO's XML web page**

Next steps:

- **DLMSO continue to post schemas to DISA/DLI**
- **Continue to monitor progress of ANSI's Conte**
Component Architecture (CICA) for XML - tar
- **DAASC develop maps**
- **DLMSO/DAASC/DLIS develop operational syst**
- **DLMSO prepare and have OSD issue policy m**




Business Rules and

DISA Repository

<http://diides.ncr.disa.mil/xmlreg/user/index.cfm>

Address http://diides.ncr.disa.mil/xmlreg/user/search_action.cfm?phrase=DLMSO&fields=All&namespace_id=341&ir_type_cd=All&status_c Lin



- [XML Registry Home](#)
- [What's New](#)
- [Briefings & Documentation](#)
- [Tools](#)
- [Search](#)
- [Registration](#)
- [Links](#)
- [Subscriptions](#)
- [Changed IRs](#)
- [Briefcase](#)

DoD METADATA REGISTRY AND CLEARINGHOUSE

DoD XML Registry

Session validated for Nat Obey [Logout](#)

Search Results

(69 Records)

[view briefcase](#)

Submission Packages

- [DLMSO_100_Series_XML... \(v.1.0,Developmental,20-Feb-03\) \[MGTINTCG Namespace - Management Intercha...\]](#)
- XML Schema for 4030 140B Unique Item Tracking Reporting
- [DLMSO_800_Series_XML... \(v.1.0,Developmental,11-Feb-03\) \[MGTINTCG Namespace - Management Intercha...\]](#)
- XML Schema for 4030 842AWW Nonconformance Report DoD WebSDR
- [DLMSO_810L_XML_Sche... \(v.1.0,Developmental,15-Apr-02\) \[MGTINTCG Namespace - Management Intercha...\]](#)
- XML Schema for 4010 810L Rev 1 Invoice (Logistics Bill)
- [DLMSO_XML_Schema_18... \(v.2.0,Developmental,31-Jul-02\) \[MGTINTCG Namespace - Management Intercha...\]](#)
- XML Schema for 4010 180M Material Returns Reporting



Business Rules and

DLIS Repository <http://www.dlis.dla.mil/XRL>



The screenshot shows a web browser window with the address bar containing <http://www.dlis.dla.mil/XRL/>. The page header features the Defense Logistics Information Service logo and the text "Defense Logistics Information Service" and "A Defense Logistics Agency Activity". A navigation menu includes links for Home, Products, Services, Programs, Cataloging, Log Tools, Supplier, Training, and Library. A sidebar on the left contains links for XRL Inquiry, Government Registration Form, User's Guide, and Program Management Office. The main content area is titled "XRL" and contains three paragraphs of text describing the XRL's purpose and functionality. A small "XRL Logo" placeholder is visible on the right side of the page.

Address  <http://www.dlis.dla.mil/XRL/>  Go L

 **Defense Logistics Information Service**
"A Defense Logistics Agency Activity"

Questions?
Ask Phyllis, Our Virtual Rep!

XRL

[Home](#) | [Products](#) | [Services](#) | [Programs](#) | [Cataloging](#) | [Log Tools](#) | [Supplier](#) | [Training](#) | [Library](#)

[XRL Inquiry](#)

[Government Registration Form](#)

[User's Guide](#)

[Program Management Office](#)

The XML Resource Library (XRL) provides a mechanism for managing metadata used for e-commerce and data exchanges. It establishes a recognized authoritative site for the submission and access of information models containing XML artifacts such as schemas, DTDs, mapping documents, etc. Furthermore, it provides services to support data integration and application interoperability.

The XRL is an operational or active repository to facilitate and enable data interoperability (data exchange). It has been specifically designed using the ebXML Technical Architecture Specification. Within the repository portion of the ebXML architecture specification, is the requirement to make vocabularies, business templates and Business Processes used to transact business accessible by all partners. The XRL serves this purpose. This means that information for data exchanges can be kept, maintained and reused as data exchanges grow. This data is otherwise lost or invisible. Another key feature of an operational repository is to validate a data exchange. This is a standard process that an application can automatically invoke through the XRL.

Using XRL assists in improving data sharing and exchange. The XRL also helps reduce data latency and the use of derivative data, improving the reliability of information retrieved. As a result, commanders and operational planners will have access to information that allows them to make better management decisions.

 XRL Logo



Business Rules and

DLMSO XML Web Page <http://www.dla.mil/j-6/dlms/eLibrary/Trans>

Address http://www.dla.mil/j-6/dlms/eLibrary/TransFormats/xml_140_568.asp Go

- Process Changes
- Transaction Formats
 - General
 - X12
 - XML
 - MILS
- Process Flows
- Archives

Extensible Markup Language (XML)

The following table lists XML schemas for the DLMS supplements and their equivalent ANSI ASC X12 formats.
The remaining schemas are available at: [810-858](#); [861-997](#)

- DoD XML Registry
- DLIS Repository
- ASC X12 140-568
- ASC X12 810-858
- ASC X12 861-997
- DLSS to DLMS Transaction Cross-Reference
- Logistics Qualifier Code List

[Send link by e-mail](#)
[Print this page](#)

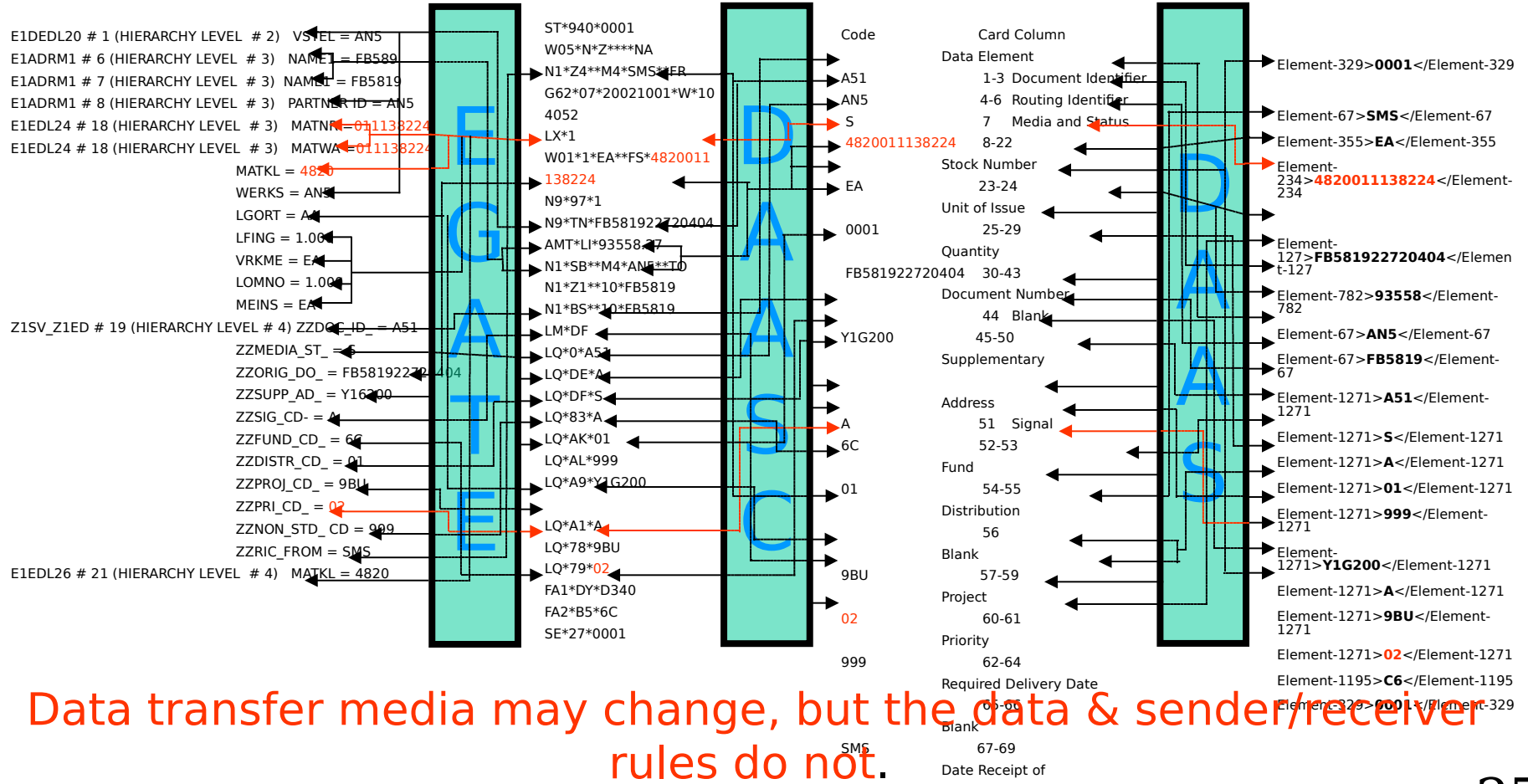
No.	ANSI X12 Version	Federal IC	XML Schema	DLMS Supplement (DS)*	Title
140A	4010	25 Sep 98	20 Dec 01	20 Dec 01	Small Arms Reporting
140B	4030				Unique Item Tracking Report
180M	4010	31 Oct 02	31 Jul 02	31 Jul 02	Material Returns Reporting
511M	4010	18 Apr 03	4 Apr 03	4 Apr 03	Modification
511R	4010	18 Apr 03	4 Apr 03	4 Apr 03	Requisition
517G	4010	10 Oct 01	12 May 03	2 May 01	Government Furnished Material (GFM) Validation



Business Rules and

Supply Chain Transaction Flow

Same Information Different Transport Standards



Data transfer media may change, but the data & sender/receiver rules do not.



Business Rules and Stan

Summary:

- **We are expanding our overarching logistics role to meet today's enterprise integration challenge and support the future logistics enterprise by:**
 - Migrating DoD away from proprietary EDI standards
 - Actively supporting Component modernization
 - Exploring & implementing new technology solutions
- **End-state:**
 - Support the adoption of the best business practices
 - Ensure that business transactions are successfully exchanged among DoD AISs, regardless of the data transmission media (standards) used by the AISs involved.
- **The DLMS are now XML capable and ready for your use**

**MODELS
1984**

**FIPS 161.2
1996**

xxx
xxx

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